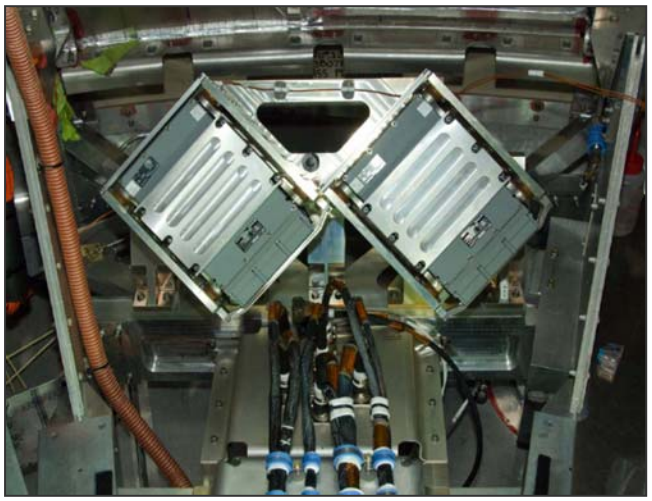
Orion Crew Exploration Vehicle
Weekly Accomplishments

Week ending February 7, 2009

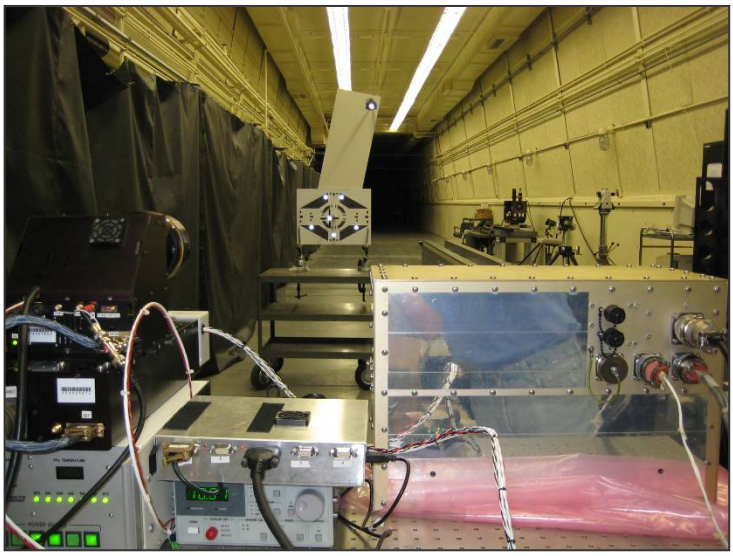
The Orion crew module pathfinder was fitted to the crew module separation ring interface fixture. The fixture is used to lift and hold the crew module for mating to the flight separation ring. Shown in photo right is the span beam in hover position over the crew module.

The Pad Abort-1 (PA-1) Space Integrated Global Positioning System/Inertial Navigation System (SIGIs) were mounted in their flight mounts (Photo below left). The SIGIs are the inertial navigation sensors for the PA-1 vehicle. These sensors measure the inertial accelerations, and calculate velocity and position during flight. Each feeds this vehicle dynamic state information to a flight computer, where flight control algorithms use them to steer the ship. The mounts for the SIGIs in the PA-1 hold them at a highly tilted angle so that extreme G forces associated with the abort maneuver are measured in multiple axes, preventing a single sensor saturation, which would degrade flight performance.



Construction of the Orion launch gantry at White Sands Missile range continues (Photo above right). Its first major use will be Orion's first ascent abort flight (AA1). The gantry structure surrounds the combined abort test booster and Orion flight test article to allow access to various levels of the rocket and Orion payload for stacking operations. It also provides protection for the stack during pre-flight operations. Once the vehicle is ready to go, the gantry is rolled away to the west on rails in preparation for launch.

The Orion Visual Navigation System (VNS) Trajectory Control Sensor (TCS) interference testing is complete. Testing of the prototype VNS and a prototype docking camera in Johnson Space Center's laser tunnel was performed to determine if interference from one sensor on another was present. Both TCS and VNS operated without interference observed. A prototype short-range target was used to emulate the preliminary detailed test objective target and testing confirmed that the TCS can track the prototype target. In photo below the VNS is shown on left (black) and the TCS on right (silver/gold) with the target in the background.



Communications and public engagement

- **NASA Edge TV filmed an Orion feature story at Johnson Space Center's Orion simulation lab and the Lockheed Martin Exploration Development Lab in Houston.** The feature included interviews with engineers and will air on NASA TV and www.nasa.gov in the March/April time frame.

- A feature story on the Orion Launch Abort System is scheduled to appear in the March issue of POPULAR SCIENCE, scheduled for publication February 15**.**

- Lockheed Martin provided Orion overviews at a science teachers training session at Space Center Houston's Educators Workshop and the Society of Women Engineers conference in Houston**.**